OTIS

Inclined Elevators

(Reno Patents)

For use in

Department Stores,
Warehouses, Shipping and
Freight Depots,
Docks,

Etc.

OTIS
ELEVATOR COMPANY

17 Battery Place
New York

Offices in all Principal Cities

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(Reno Patents)

Machines for the
quick movement of
merchandise

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Otis Inclined Elevators

Manufactured under Reno Patents

IN THIS BOOK are described some of the types of *Otis Inclined Elevators* which are doing for the store, the dock, the warehouse what the Otis Vertical Elevators have done for the office building.

As the passenger elevator makes it possible to add story after story to the building on a given plot of land, so the Otis Inclined Elevator enables the working crew to increase the quantity of merchandise moved in a given time, and by relieving congestion increases the amount of business that can be done within a given space. They are therefore not luxuries, not philanthropic conveniences, but real money makers.

"Efficiency" is the business word for to-day, and *Otis Inclined Elevators* are efficiency promoting machines. Like newspaper presses, they are continuous deliverers.

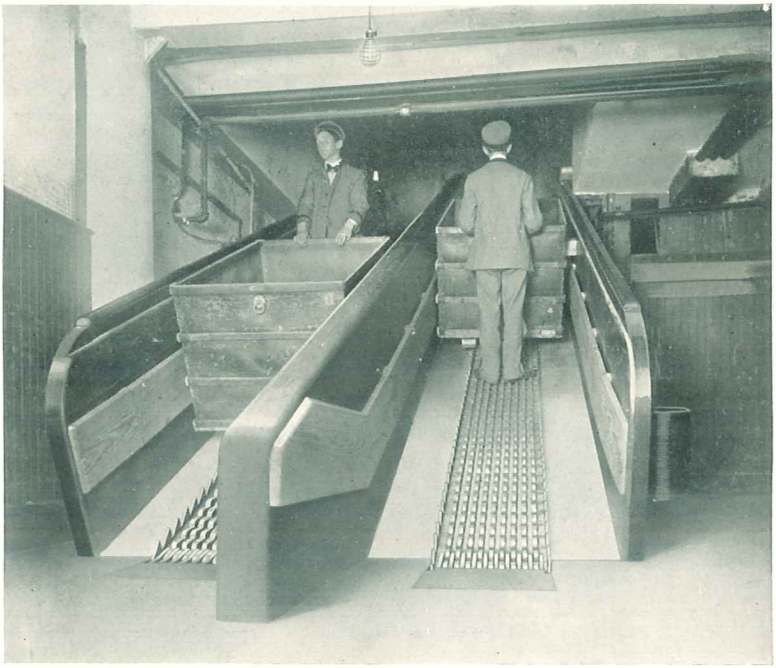
They will send a stream of hundreds of trucks per hour up any incline between ship and dock. They expedite the movement of merchandise in the warehouse between floors. They solve the shipping-room problems of the department store.

Otis Inclined Elevators are specially designed to meet special conditions. They have many uses not suggested in this book.

Our representative will call if you are interested in elevator equipment of this character.

Otis Duplex Inclined Elevator

(Reno Type)



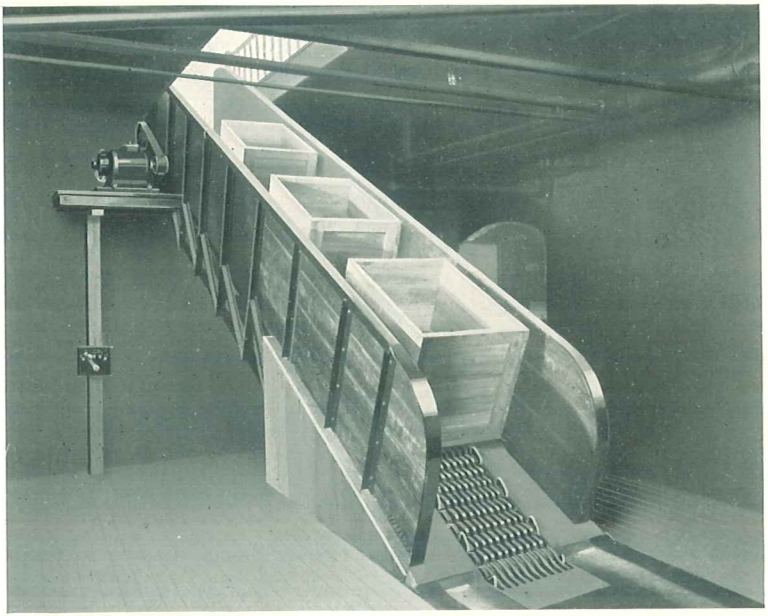
The Inclined Elevator as shown above is designed for use in Department Stores and Warehouses. This machine is entirely automatic in operation and is a continuous motion carrier.

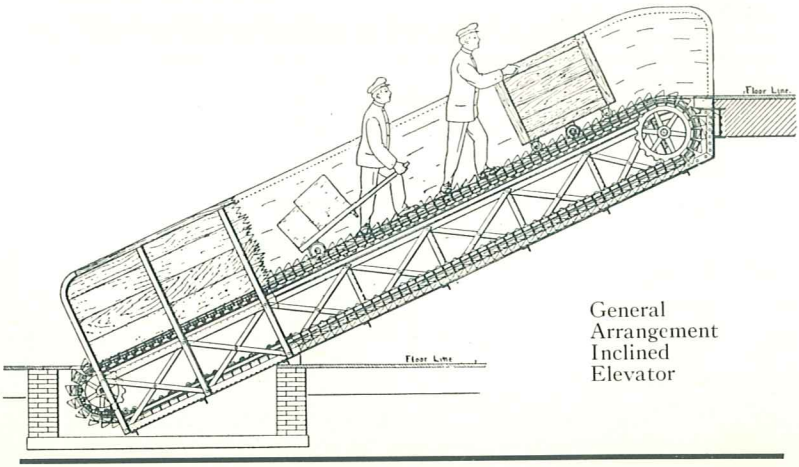
It consists of a moving incline having on each side of each tread iron lugs which engage iron projections bolted to the bottom of the trucks or "Wheelers" which are conveyed to the desired floor.

We also build single file machines which can be reversed to take the trucks down. One machine of this type will carry 600 trucks per hour in either direction.

Otis Single File Inclined Elevator

(Reno Type)





General
Arrangement
Inclined
Elevator

Otis Dock Elevator
(Reno Type)

Otis Dock Elevator

(Reno Type)

The cut on the opposite page shows a machine which is particularly adapted for Docks where the unloading of vessels must be accomplished quickly and economically.

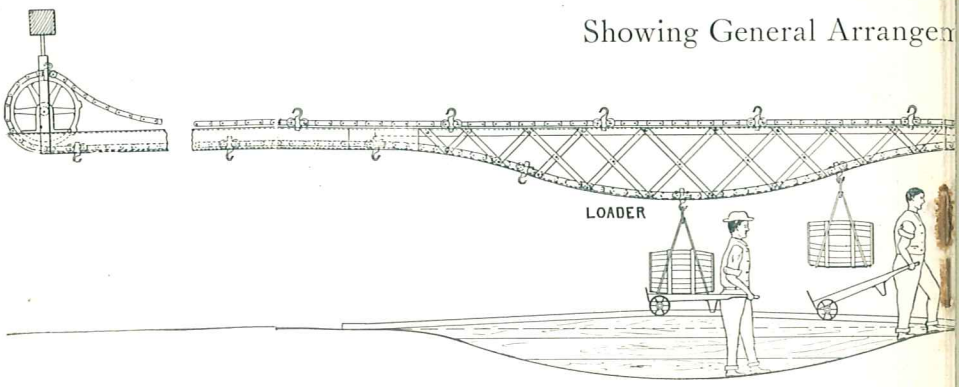
It consists of an endless steel chain with steel teeth. The chain slides in a lubricated steel channel at either end of which are located sprocket wheels over which the chain passes. These sprocket wheels are driven by a motor conveniently located on the dock. It is controlled by an attendant and can be started, stopped and reversed at any point during its travel. Note that the truck wheels carry the load, the chain simply engaging the axle and thus pulling the truck up the incline. An important feature is its perfect safety to the workmen. There is no moving platform as in other types, which require great care by those who are using them in order to prevent the feet from being caught.

In order to meet the variation in the heights of vessels due to tides and draft, the upper sprocket wheel is centered on the hinge of the "Incline Drop," so that the latter can be raised or lowered without affecting the machine itself.

The speed is 100 to 300 feet per minute, at which latter rate it will deliver 1,800 trucks per hour either up or down.

Otis Overhe

(Reno T



Showing General Arrangen

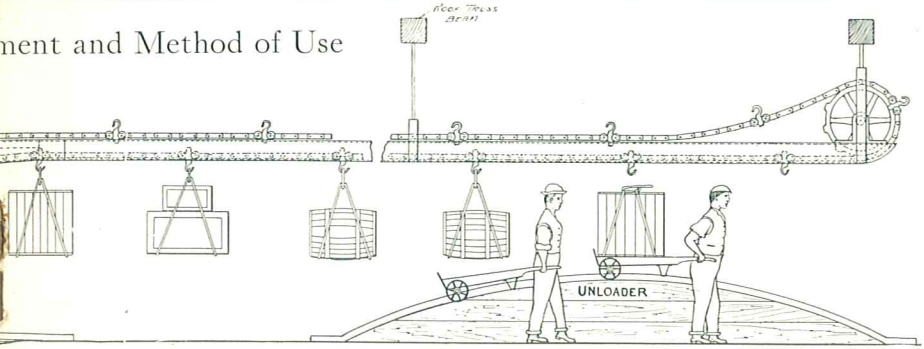
The object of this type is to carry freight, such as barrels, boxes, bales, etc., in Warehouses, Steamship Piers and Railroad Terminals economically and rapidly. The machine consists of an endless chain of special construction provided with pins and hooks carried by small iron wheels which roll upon the flanges of channel beams spaced about one inch apart, thus forming a strong truss frame or carrying truck, capable of spans of considerable length. At each end the chain passes over a sprocket wheel. These wheels can be driven by motors in either direction, the operation of which is controlled by push-buttons or switches located at convenient points along the line.

The method of loading is illustrated very clearly on this page, and is as follows: A line of truckmen with loaded trucks walk through the special foot-way; the trucks at each side engage the truck wheels; the rope slings which have been previously placed around

ead Carrier

Type)

ment and Method of Use



The chain may be of any length and may pass over any obstruction

the pieces of freight are then one after the other looped into the traveling hooks by an attendant, and as the chain moves forward, the package is lifted free and the truckman walks away with his truck. By a small device not shown in the illustration, the loads can be detached from the hooks automatically and deposited at any point, allowing the pieces of freight to slide gently down a 3-foot incline where they can be trucked to their destination.

At the unloading terminal as shown on this page, the operation of transferring suspended loads to the trucks is quite similar to the loading arrangement. In this case the line of truckmen with empty trucks turn under the suspended loads and draw their trucks up the grooved tracks which form a passageway, so that at its highest point the truck is practically horizontal, and the load is lifted free from the hook, which is detached by an attendant and the truckman then

Otis Overhead Carrier

(Reno Type)

(Continuation from preceding page)

takes his loaded truck, down the sloping tracks of the "unloader" to its destination. As explained before the detaching of the loads can be arranged automatically. The speed of the chain can be regulated to suit conditions. If the speed is 100 feet per minute and the hooks are spaced 7 feet apart, about 900 pieces of freight can be transported per hour.

By this method of transferring freight the packages are not subjected to breakage and rough treatment, which is found to be the case in trucking over uneven floors, combined with frequent dumping and re-handling. This machine does not take up valuable floor space, and at the same time is ready for use at a moment's notice. The cost of installation and maintenance charges are very small.

An important feature of this machine is that it can be suspended from the ordinary roof trusses or ceiling of the building, and thus leave the floor unobstructed. It is high enough to permit of trucking and moving freight underneath, and it can be carried up and over obstructions such as freight cars or around corners with equal facility.

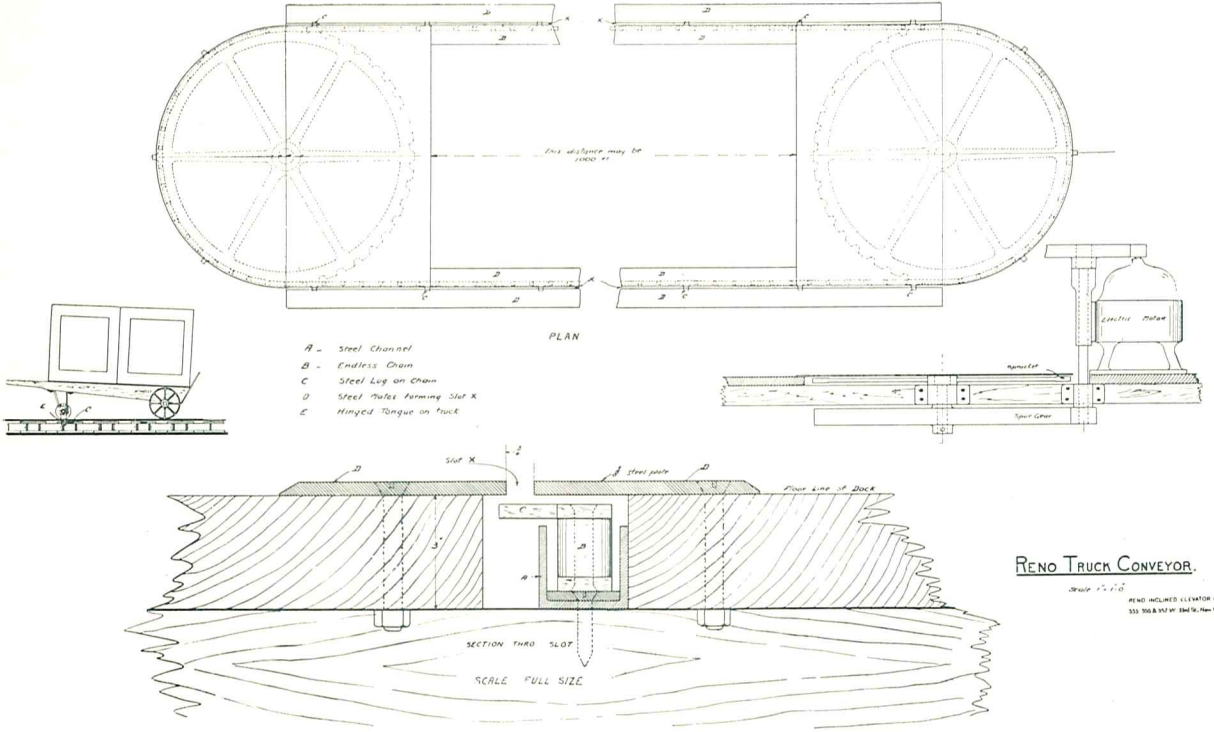
Otis Ramp

(Reno Type)

This machine is similar in construction to the inclined elevator, and can be used for boxes, bales, and like material when the hand-trucks are not desired.

The moving incline is provided with hardwood cleats which form longitudinal ridges and grooves. On arriving at the upper landing the man's feet slide off upon the prongs of a cast iron comb. The action is so perfect that the man is landed without shock or jar and with absolute safety. The iron lugs which engage the axle of the truck prevent the load from running backwards. The machine can be reversed and heavy loads can be lowered efficiently and without danger to the man.

Its capacity is 600 trucks per hour.

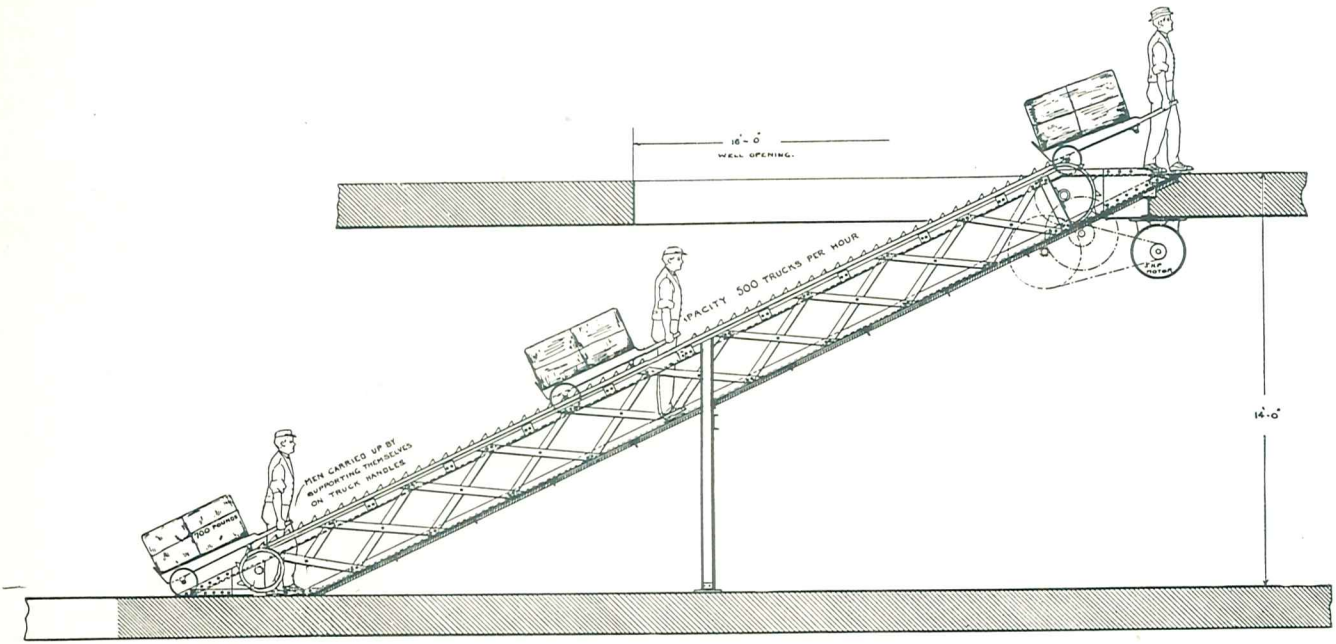


Otis Truck Carrier
(Reno Type)

Otis Truck Carrier

(Reno Type)

The preceding page shows a view of our Truck Carrier. The operation of this machine is similar to the suspended freight carrier, but is installed under the floor. It consists of a moving chain running in a steel channel. This chain passes over large sprocket wheels which are placed at the beginning and ending of the travel of the carrier and are operated by a vertical motor geared intermediately. The advantage of this machine is that when the truckmen with their trucks reach the carrier, they simply insert the hinged tongue on the truck into the lugs on the chain, and the truck goes onward to its destination. By this method only a few truckmen need be employed, as when the trucks are loaded and placed on the carrier, the men return for more trucks and the loading operation is continued. The empty trucks are sent back to the loading station on the return side of the chain. A most important feature of this installation is that no working parts of the machine are visible and no part of the floor is obstructed, thus making it possible to move material over the apparatus without affecting the machine itself. When operating to its full capacity the machine will carry 900 trucks per hour.



Otis Hand Rail Inclined Elevator
(Reno Type)

Otis Hand Rail Inclined Elevator

(Reno Type)

THE machine consists essentially of parallel steel trusses, which are strongly braced at the bottom but open at the top. The top of each truss is provided with a steel channel in which a pair of special chains are carried. These chains are endless and travel around suitable sprockets at the upper and lower end of the incline, the upper sprocket being driven by an electric motor through suitable gearing.

The man drawing the truck walks between the trusses, lowers the handles until the lugs on the chains engage the legs on the truck handles, and the truck is drawn up the incline. The axle of the truck is also engaged by the lugs on the chains, so that it is impossible for the truck to run backward even when the handles are raised. A steel angle track is riveted to the inside of each truss, and upon which the truck wheels roll. The truckman walks up the cleated incline, between the truss frames.

A very important feature is that the trucks are carried up in the same relative position that they would be if drawn on a level, and the truckman is also in the same natural position. The load cannot fall off the truck and the men in the position shown are protected from accident. This makes it possible to give the incline a steep angle, and thus economize in space and cost of construction.

By reversing the motor, this inclined elevator will carry the trucks and men down with equal facility.

DIRECTORY OF OFFICES

UNITED STATES

New York—Main Office: 17 Battery Place.
Works: Yonkers, N. Y.
Works: Harrison, N. J.
Works: Buffalo, N. Y.
Chicago—Main Office: 80 East Jackson Boulevard.
Repair and Supply Department: 213-221 W. Michigan Street.
Works: Chicago, Ill.
Works: Moline, Ill.
Works: Peru, Ind.
Works: Quincy, Ill.
St. Louis—Office: Security Building.
Works: 8th and Mullanphy Sts.
Houston—Office and Works: German Street.
San Francisco—Office and Works: Stockton, North Point and Beach Streets.

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Cincinnati, Ohio—1014 Mercantile Library Building.
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Columbus, Ohio—230 North Third Street.
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Works: Victoria Avenue, Hamilton, Ont.
Montreal, P. Q.—Roy and St. James Streets.
Ottawa, Ont.—O'Connor Street.
Vancouver, B. C.—156 Alexander Street.
Winnipeg, Manitoba—316 Cumberland Avenue.
Edmonton—562 Second Street.

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Otis Elevator Company, Ltd.—Main Office: 4 Queen Victoria Street, London, England.
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Brighton, Eng. " "
Glasgow, Scotland " "
Liverpool, Eng. " "
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Newcastle, Eng. " "
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